

***Corchorus fitzroyensis* (Malvaceae: Grewioideae), a new, poorly known species from Western Australia's Kimberley region**

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SHORT COMMUNICATION

The taxonomy of the stellate-haired species of *Corchorus* L. in the north-west of Australia is quite complex and far from fully resolved (see Halford 2004); however, the new species described below, while not particularly striking, is sufficiently morphologically distinct to warrant its taxonomic recognition. Found along the Fitzroy River valley in the Kimberley region of Western Australia, this species is currently considered to be of conservation concern because its known habitat has been severely impacted by grazing.

Corchorus fitzroyensis S.J.Dillon & K.A.Sheph., *sp. nov.*

Type: [near] Geikie Gorge National Park, Western Australia [precise locality withheld for conservation reasons], 6 May 1988, *E.M. Goble-Garratt* 506 (*holo:* PERTH 01526774; *iso:* CANB 550575).

Corchorus sp. Fitzroy Crossing (A.J. Ewart s.n. PERTH 01526790), Western Australian Herbarium, in *FloraBase*, <https://florabase.dpaw.wa.gov.au/> [accessed 15 February 2019].

[*Corchorus vermicularis* auct. non F.Muell.: B.L. Rye in J.R. Wheeler (ed.), *Fl. Kimberley*, p. 165 (1992), *p.p.*]

Illustration. B.L. Rye in J.R. Wheeler (ed.), *Fl. Kimberley*, p. 163, Figure 44k (1992), as *Corchorus vermicularis* F.Muell.

Subshrub to 0.4(–0.6) m high, to 1.2 m wide; stems much branched, spreading to erect; young shoots with a grey-white indumentum of stellate hairs; older stems glabrescent, dark reddish brown. Branchlets, leaves, petioles, stipules, peduncles, pedicels and bracts with sparse to moderately dense stellate hairs. *Stellate hairs* sessile or stipitate, 0.15–0.5(–0.6) mm diam.; stipes white or ferruginous, straight, 0.05–0.1 mm long; rays white, stiff, 0.05–0.4 mm long. *Stipules* subulate, 1–3 mm long. *Leaves* with petioles (0.5–)1.0–3.5(–5.0) mm long; lamina narrowly oblong, oblong-elliptic or narrowly obovate to obovate, (4–)7–19(–25) mm long, (2–)3–8(–10) mm wide, l:w ratio 1.7–2.9(–3.2):1, green to dark

green and glossy, concolorous or slightly paler abaxially; adaxial surface glabrous or with scattered stellate hairs; abaxial surface usually with scattered or moderately dense stellate hairs, rarely glabrous; base cuneate; margin coarsely serrate; apex obtuse to rounded or truncate. *Inflorescences* solitary at upper nodes, umbellate, 2–5-flowered, leaf-opposed or lateral; peduncles (0–)0.2–1.0 mm long; pedicels 1.0–2.5 mm long, patent or recurved in fruit; bracts subulate-linear to filiform linear, 0.7–1.5 mm long. *Flower buds* obovoid-ellipsoid, 1.2–1.7 mm diam.; apex obtuse with 4–5 erect caudae 0.2–0.3 mm long. *Sepals* (4–)5, not persistent, narrowly obovate, 3.0–4.5 mm long, 1.4–2.25 × longer than petals, 0.7–1.1 mm wide; abaxial surface with moderately dense to dense stellate hairs 0.2–0.3 mm long; adaxial surface puberulous proximally, glabrous distally, or sometimes with scattered stellate hairs; apex acuminate, 0.2–0.4(–0.6) mm long. *Petals* (4)5, golden yellow; lamina narrowly oblong to narrowly oblong-ovate, 2.0–2.6 mm long, 0.5–0.75 mm wide, glabrous on both surfaces; claw 0.4–0.5 mm long, with moderately dense stellate hairs on margins. *Androgynophore* 0.2–0.3 mm long; annulus entire, 0.1–0.2 mm long, glabrous. *Stamens* 24–28(–34); filaments (1.5–)2.0–3.0 mm long; anthers 0.3–0.4 mm long. *Ovary* cylindrical, 1.0–1.6 mm long, 0.3–0.6 mm diam., densely stellate-hairy; 2-locular; style 1.6–2.0 mm long. *Fruits* subcylindrical, 10–42 mm long, 0.8–1.2 mm across, 8–35 × longer than wide, sinuous to twisted, markedly constricted between seeds, 2-valved, brownish grey to reddish brown, with moderately dense stellate hairs 0.1–0.15(–0.2) mm diam.; apex cylindrical to 2 mm long. *Seeds* compressed-obovoid, 1.1–1.5 mm long, dark brown. (Figure 1, 2A)

Diagnostic features. Distinguished from other Western Australian species of *Corchorus* with stellate hairs by the following combination of characters: leaves with coarsely serrate margins, a cuneate base and a mostly glabrous adaxial surface; sepals that are 1.4–2.25 × longer than the petals; and narrowly oblong to narrowly oblong-ovate petals (see Figure 1) that are 2.0–2.6 mm long and 0.5–0.75 mm wide.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 17 Apr. 1972, T.E.H. Aplin 4711 (CANB, PERTH); 21 Apr. 1985, T.E.H. Aplin, R.J. Cranfield & J.R. Wheeler 231 (CANB, PERTH); 18 June 1996, B.J. Carter BJC 713 (BRI n.v., DNA n.v., PERTH); 17 Apr. 1988, R.J. Cranfield 6414 (CANB, PERTH); Apr. 1927, A.J. Ewart s.n. (MEL n.v., PERTH); Apr. 1905, W.V. Fitzgerald 373 (PERTH); 11 May 1944, C.A. Gardner 7120 (PERTH); 12 Jan. 1951, C.A. Gardner 9775 (PERTH); 24 July 1987, S. Ingleby JV19 (PERTH); 4 Sep. 1995, T.R. Lally TRL 702 (AD n.v., CANB, PERTH); 11 June 2019, A. Markey, K. Brown & A.A. Mitchell FV 11500 (PERTH); 11 June 2019, A. Markey, K. Brown & A.A. Mitchell FV 11501 (PERTH); 11 June 2019, A. Markey, K. Brown & A.A. Mitchell FV 11502 (PERTH); 11 June 2019, A. Markey, K. Brown & A.A. Mitchell FV 11503 (PERTH); May 1970, Y. Power 731 (CANB, PERTH); 8 May 1962, R.D. Royce 6946 (PERTH); 19 July 1988, M.J.S. Sands 5125 (K n.v., PERTH); 19 July 1988, M.J.S. Sands 5126 (K n.v., PERTH); 19 July 1988, M.J.S. Sands 5127 (K n.v., PERTH); 19 July 1988, M.J.S. Sands 5130 (K n.v., PERTH).

Phenology. Flowering and fruiting may occur throughout the year; fertile specimens have been collected in January, April to July and September.

Distribution and habitat. Recorded from 14 populations across the Central Kimberley and Dampierland bioregions along the Fitzroy River valley from c. 60 km north-east of Fitzroy Crossing to c. 100 km east of Broome. Grows in sandy soil or grey alluvial silt in open areas, on flat, cracking, stony ground, eroded floodplains, sand banks in river channels, along roadsides, and in moist seepage areas around billabongs. Found in open savannah woodland or riverine woodland in association with *Acacia* sp., *Corymbia bella*, *C. polycarpa*, *Eucalyptus microtheca*, *Sesbania* sp. and *Sorghum* sp.



Figure 1. *Corchorus fitzroyensis*. A – habitat; B – habit in dense, tall grass; C – habit in erosion gullies; D – flower showing the oblong petals that are shorter than the sepals; E – dehiscent fruit. Photographs by A. Markey from A. Markey, K. Brown & A.A. Mitchell FV 11503 (B, E) and A. Markey, K. Brown & A.A. Mitchell FV 11501 (C, D).

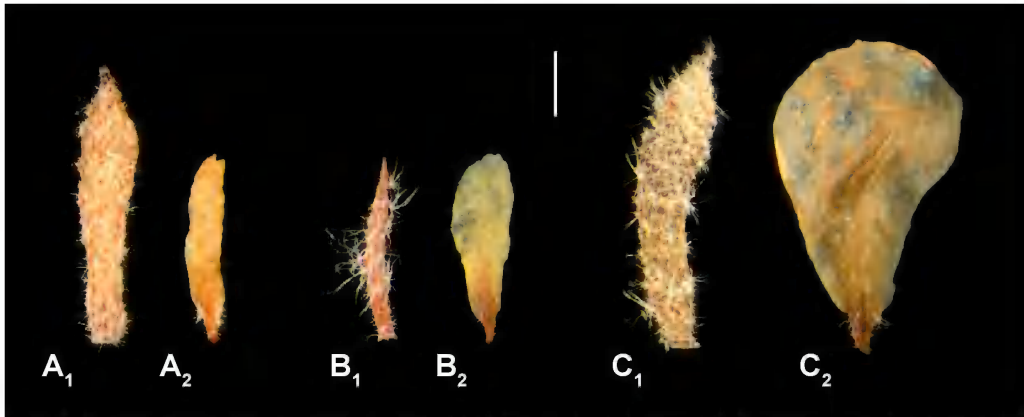


Figure 2. Comparative sepal and petal morphology of select species of *Corchorus*. A – *C. fitzroyensis*, abaxial surface of sepal (A1) and petal (A2), from *E.M. Goble-Garratt* 506 (PERTH); B – *C. pumilio*, abaxial surface of sepal (B1) and petal (B2), from *M.J. Sands* 4438 (PERTH); C – *C. sidoides* subsp. *vermicularis*, abaxial surface of sepal (C1) and petal (C2), from *D.J. Edinger* 1716 (PERTH). Scale bar = 1 mm. Photographs by S.J. Dillon.

Conservation status. *Corchorus fitzroyensis* is listed as Priority Three under Conservation Codes for Western Australian Flora (Smith & Jones 2018), as *C. sp. Fitzroy Crossing* (A.J. Ewart s.n. PERTH 01526790). Herbarium records suggest that it is relatively widespread along the Fitzroy River valley (Western Australian Herbarium 1998–); however, the understorey vegetation in this valley has been significantly impacted by heavy cattle grazing in many places and searches at a number of known locations in 2014 failed to relocate any plants. New populations were located c. 60 km north-east of Fitzroy Crossing during a recent survey in 2019 (*A. Markey, K. Brown & A.A. Mitchell* FV 11500–11503) at which time plants were observed to either be uncommon or localised along an eroded gully and track.

Etymology. The epithet refers to the Fitzroy River, along which this species is found.

Vernacular name. Fitzroy River Corchorus.

Affinities. *Corchorus fitzroyensis* appears closely allied to (and has been previously confused with) *C. sidoides* subsp. *vermicularis* (F.Muell.) Halford and *C. pumilio* R.Br. ex Benth. *Corchorus fitzroyensis* differs from both taxa in having leaves with cuneate bases (vs obtuse to rounded) and coarsely serrate margins (vs serrate to serrulate), sepals that are 1.4–2.25 times longer than the petals (vs 0.9–1.2 times), and narrowly oblong to narrowly oblong-ovate petals (vs narrowly obovate to obovate) that are 2.0–2.6 mm long and 0.5–0.75 mm wide (vs 2.5–5.5 mm long and 0.8–2.5 mm wide) (Figure 2). *Corchorus pumilio* also differs from *C. fitzroyensis* in having persistent sepals in fruit, stellate hairs that are 0.5–1.2 mm diam. (vs 0.15–0.5 mm diam.), 12–14 stamens (vs 24–28 stamens), and fruit that is 3.0–6.5 times longer than wide (vs 8–35 times longer than wide).

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